

Development of Lady Beetle Cultivation for Pest Control

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The objective of this research was to examine the feasibility of using lady beetles for pest control. The exploration showed that there were 2 groups of lady beetles, i.e. pest lady beetles and beneficial lady beetles. The latter group, which can control insect pests, included *M. sexmaculatus*, *Micraspis discolor* Fabricius and other lady beetles. *M. sexmaculatus* contained the greatest capability to attack aphids. The investigation of the biology and behavior of *M. sexmaculatus* showed that it had an average of 57 days per one life cycle with 4 growth stages. The average egg laying was 28.40 ± 1.14 eggs per time, the percentages of incubation and survival from larvae to adult were 58.39 ± 1.25 and 56.76 ± 1.49 , respectively. To prevent the females from eating eggs, male pheromones was used as lure in raising *M. sexmaculatus* which could be prepared from a male fecal solution mixed with male footprints. *Phenacoccus manihoti* was fed to larvae at 0.3 grams per week to prevent eating among the larvae. The designing of a prototype house for culturing *M. sexmaculatus* showed that a prototype house made of transparent material with egg tray inside and raised at 25 ° C, 75% relative humidity at the density of 0.009 larvae/cm³ resulted in higher egg laying (107.14%), hatching (32.76%), and larvae survival (77.78%). Finally, the release of *M. sexmaculatus* in agricultural fields claimed that it could control many types of aphid pests.

Awards Won:

Fourth Award of \$500